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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/700,195	11/03/2003	Karl-Friedrich Muck	05587-00359-US	3944

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EXAMINER

ZEMEL, IRINA SOPJIA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/700,195

Applicant(s)

MUCK ET AL.

Examiner

Irina S. Zemel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 6, 7 and 11 is/are allowed.
- 6) ☒ Claim(s) 1-5, 9, 10 and 12-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102/103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 13, 15-18 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sakurai.

The disclosure of the cited reference is fully discussed in the previous office action and the rejection of claims 1-5 stands, primarily for the reasons set forth in the previous office action. Newly added limitation to the amounts of the respective structural units in the copolymer(as per claims 1, 13, 17 and 18) is met by the disclosure of illustrative examples specifying that the end block are present in the amounts of about 4-7 % by weight. Alternatively, the reference expressly states that the concentration of end blocks can be easily determined and varied to obtain polyacetals with the desired molecular weight. See column 10, lines 39-44. Thus, varying amounts of the end blocks in the resulting copolymers in order to obtain desired polyacetals would have been obvious from the disclosure of the reference. As previously discussed, the disclosed polymers can contain POM blocks can contain various comonomers such as those derived from ethylene oxide or various cyclic esters. See column 8, line 55 to column 9, line 32, and column 4 line 55 to column 5, line25.

Therefore, the invention as claimed in claims 1-5, 13, 15-18 is fully within the purview of the cited reference.

Claim Rejections - 35 USC § 103

Claims 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai in combination with US Patent 4,431,794 to Sadlowski et al. (hereinafter "Sادلowski"), PGP 2003/0018104 to Mours et al., (hereinafter "Mours") and applicants disclosure.

The rejection of claims 9-12 stands as per reasons set forth in the previous office action and in view of the discussion of the Sakurai reference above.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakurai in combination with US 4,427,807 of Zimmerman et al., (hereinafter "Zimmerman").

The disclosure of Sakurai is discussed above. While the reference discloses polyoxymethylene blocks that can be obtained by reacting trioxane with cyclic esters, the reference does not disclose polyoxymethylene (POM) blocks that contain the third claimed comonomer, i.e. a dicyclic compound of formula IV. However, addition of such compounds, for example diglycidyls corresponding to formula Iva is well known in the art and would have been obvious from the disclosure of, for example, Zimmerman, who expressly discloses that addition of diglycidyl comonomers to POM copolymers results in improvement of various physical properties such as tensile strength.

Response to Arguments

Applicant's arguments filed 1-21-2005 with respect of the product claims 1-5, 9-10, and 12 (and newly added claims 13-18) have been fully considered but they are not persuasive. The major argument presented by the applicants is that the prior art,

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Sakurai, teaches terminal groups corresponding to the claimed formula (II). While this may be so, the claimed copolymers clearly read on block copolymers that contain only terminal blocks of structural unit (II). There is no requirement anywhere in the claims that the claimed copolymers contain block units (II) statistically introduced in the chain, nor the claimed copolymers require different blocks of formula (I) to be separated by block of units (II). The reference clearly discloses that the copolymers may be terminated by blocks (II) on both ends, and it further discloses that various oxymethylene copolymers (including those of block structure with different comonomers) are within the scope of the claimed invention as illustrated by various formulas in columns 2-3. Therefore, the claimed copolymers fully correspond to the copolymers disclosed by the reference. In other words, the applicants argue features that are not claimed or required by the claimed language. Further, the reference clearly and expressly discloses addition of comonomer of formula (II) into POM blocks. Note that units (III) do not represent either blocks or polymers since z can be 1 as per claims 3. Therefore, contrary to applicants argument, subject matter claimed in claims 3 is not even "further removed", but expressly disclosed in the reference.

Applicant's arguments, filed on 1-21-2005, with respect to claims 6,7 and 11, i.e. method claims, have been fully considered and are persuasive. The respective rejections of these claims has been withdrawn.

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter: Claims 6,7 and 11 are drawn to a process for preparing a copolymer by forming an initial charge of monomers forming POM unit and dihydroxy-terminated monomer of formula (V). The prior art of record does not teach or fairly suggest process for preparation of copolymers by admixing in the initial charge the di-hydroxy-terminated monomers of formula (V).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ISZ



James J. Seidleck
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